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10/681,756	10/08/2003	Robert Bruce Miller	26015-194/P86	8282

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EXAMINER	
THOMAS, COURTNEY D	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

EV

Office Action Summary	Application No.	Applicant(s)	
	10/681,756	MILLER, ROBERT BRUCE	
	Examiner	Art Unit	
	Courtney Thomas	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,9-39 and 41-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9-39 and 41-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/10/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, 9-39 and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koenck et al. (U.S. Patent 6,931,095).

3.

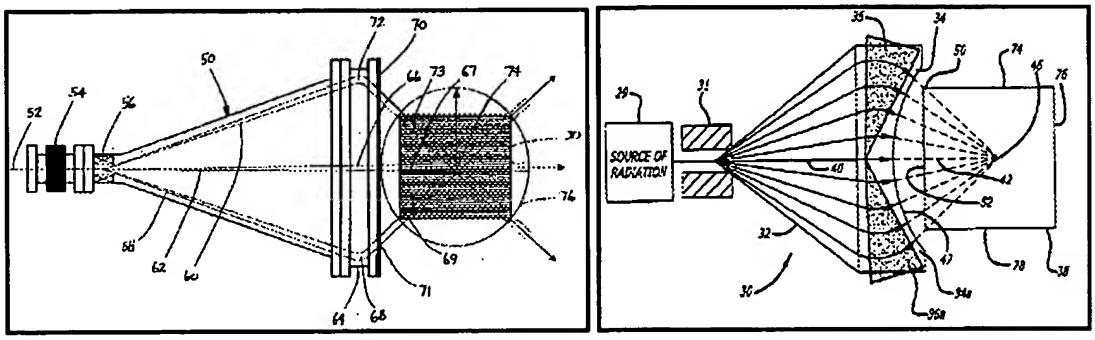


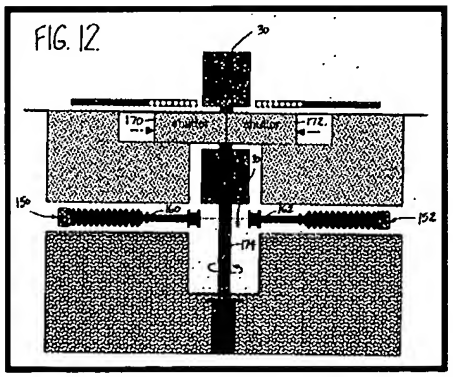
Fig. 4 (Left) - System for Irradiating Articles - U.S. Patent 6,931,095 to Koenck et al.;

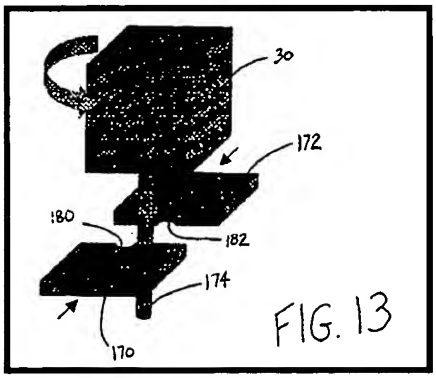
Fig. 2 (Right) - X-ray Pallet Processing – U.S. Patent Application Publication 2005/0078789 to Miller (Instant Application 10/681,756)

4. **As per claims 1 and 18**, Koenck et al. discloses a system comprising (and corresponding method of irradiating) comprising: a source of radiation not shown in Fig. 4 above; Examiner notes however, Fig. 4 is indicative of system configured to irradiate a pallet (**30**) with X-ray radiation (**69**- note X-ray converter **70**)) having first and second states for directing radiation in a first plane toward the pallet in the first state and for not directing radiation toward the pallet in the second state; a holder (not shown above, see Figs. 12 and 13) having first and second states

for moving the pallet (30) in a second plane substantially perpendicular to the first plane during the first state of the source and for preventing any movement of the pallet in the second state of the source and a motor (not shown above, see Figs. 12 and 13) having first and second states of operation for rotating the pallet on an axis substantially corresponding to the second plane during the second state of the source of radiation (see also column 7, lines 13-67; column 8, lines 1-41). Examiner notes, for purposes of discussion, that Koenck et al. do not explicitly disclose a control for energizing the source of radiation. However, those having ordinary skill in the art would appreciate the disclosure as being directed to a means for controlling radiation parameters of the system (see column 8, lines 37-41). Koenck et al. do not explicitly disclose a system wherein the motor rotates the pallet through a particular angle each time that the source of radiation and the holder are in the second state.

5.





Figs. 12 & 13 - System for Irradiating Articles - U.S. Patent 6,931,095 to Koenck et al.

6. Koenck et al. teach the rotation of a pallet through a particular angle to irradiate the entire pallet (see Figs. 12 and 13, above). Koenck et al. suggest the rotation of the pallet when the source of radiation and holder are in a second state (column 7, lines 46-49; column 8, lines 2-7).

7. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Koenck et al. such that it incorporated a motor,

wherein the motor rotates a pallet through a particular angle each time that the source of radiation and the holder are in the second state. One would have been motivated to make such a modification for the purpose of controlling radiation dosage applied to the pallet as suggested by Koenck et al. (column 7, lines 46-49; column 8, lines 2-7; see also column 8, lines 8-10).

8. **As per claims 2 and 19**, Koenck et al. as modified above, disclose a system wherein the source of radiation is X-rays (69).

9. **As per claim 20**, Koenck et al. as modified above, discloses a system wherein the pallet (30) is rotatable pallet on a particular axis and wherein the pallet is rotatable on the particular axis after the energizing of the pallet by the radiation source. (see Figs. 12 and 13, above; column 7, lines 46-49; column 8, lines 2-7; see also column 8, lines 8-10). For purposes of discussion, Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41).

10. **As per claim 3**, Koenck et al. as modified above, does not explicitly disclose a system further comprising a magnetic lens assembly for converging radiation from the source to a particular position in the pallet during the first state of the source of radiation.

11. Koenck et al. teach the use of a compound-bending magnet for converging radiation from the source to a particular position in the pallet during the first state of the source of radiation (see Fig. 4, above).

12. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the system of Koenck et al. such that it incorporated a magnetic lens assembly. One would have been motivated to make such a modification for the purpose of converging radiation from the source to a particular position in the pallet during the

first state of the source of radiation, as suggested by Koenck et al. (see Fig. 4, above). Examiner regards the compound-bending magnet of Koenck et al. as a functionally equivalent element to the claimed magnetic lens assembly, since the disclosed function of the compound-bending magnet of Koenck et al., is to converge radiation from the source to a particular position in the pallet during the first state of the source of radiation. Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41).

13. **As per claims 4-7**, Koenck et al. as modified in claim 3, discloses a system wherein the motor is operable to rotate a pallet on a particular axis during the second state of the source of radiation and the holder (see Figs. 12 and 13, above; column 7, lines 46-49; column 8, lines 2-7; see also column 8, lines 8-10); wherein the magnetic lens converges radiation from the source to a particular position on the pallet after each successive rotation of the pallet on the particular axis (see Figs. 4, 12 and 13); wherein a microcomputer controls radiation parameters (see column 4, lines 32-37). For purposes of discussion, Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41).

14. **As per claims 9 and 32**, Koenck et al. disclose a system (and corresponding method) comprising: a source of radiation producing radiation in a first direction- not shown in Fig. 4 above; Examiner notes however, Fig. 4 is indicative of system configured to irradiate a pallet (**30**) with X-ray radiation (**69-** note X-ray converter **70**)). Koenck et al. do not explicitly disclose a system further comprising a magnetic lens assembly for converging radiation from the source to a particular position in the pallet in a direction different from a first direction.

15. Koenck et al. teach the use of a compound-bending magnet for converging radiation from the source to a particular position in the pallet in a direction different from a first direction (see Fig. 4, above).

16. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the system of Koenck et al. such that it incorporated a magnetic lens assembly. One would have been motivated to make such a modification for the purpose of converging radiation from the source to a particular position in the pallet in a direction different from a first direction, as suggested by Koenck et al. (see Fig. 4, above). Examiner regards the compound-bending magnet (64) of Koenck et al. as a functionally equivalent element to the claimed magnetic lens assembly, since the disclosed function of the compound-bending magnet (64) of Koenck et al., is to converge radiation from the source to a particular position in the pallet in a direction different from a first direction. Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41).

17. **As per claims 10-14, 16, 17 and 33-37**, Koenck et al., as modified in claim 9, discloses a system (and corresponding method of irradiating) wherein the magnetic lens focuses radiation at a center of a pallet (see Fig. 4 above); a converter (70) is provided to provide X-rays; the magnetic lens converges X-rays to the center of the pallet; wherein the radiation initially constitutes electron beamlets (**52**) and wherein the electron beamlets are converted to X-rays before the electron beamlets reach the pallet and wherein the magnetic lens irradiates approximately one eighth of a cross sectional area of the pallet(see Fig. 4, above). For purposes

of discussion, Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41).

18. **As per claim 15**, Koenck et al., as modified in claim 9, discloses a system comprising a scan horn (**50**) but does not explicitly disclose a system comprising a dipole magnet.

19. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the system of Koenck et al. such that it incorporated a magnetic lens assembly comprising a scan horn (50) and a dipole magnet. One would have been motivated to make such a modification for the purpose of converging radiation from the source to a particular position in the pallet, as suggested by Koenck et al. (see Fig. 4, above). Examiner regards the combination scan horn (50) compound-bending magnet (64) of Koenck et al. as functionally equivalent elements to the claimed magnetic lens assembly, since the disclosed function of the combination scan horn (50) compound-bending magnet (64) of Koenck et al., is to converge radiation from the source to a particular position in the pallet in a direction different from a first direction. Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41).

20. **As per claims 21 and 38-43**, Koenck et al., disclose a system comprising: a source of radiation; a converter (70) and a scan horn (**50**) but does not explicitly disclose a system comprising a dipole magnet or wherein the converter has an arcuate periphery.

21. Koenck et al. teach the use of a compound-bending magnet for converging radiation from the source to a particular position in the pallet (see Fig. 4, above).

22. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the system of Koenck et al. such that it incorporated a scan

horn (50) and a dipole magnet. One would have been motivated to make such a modification for the purpose of converging radiation from the source to a particular position in the pallet, as suggested by Koenck et al. (see Fig. 4, above). Examiner regards the combination scan horn (50) compound-bending magnet (64) of Koenck et al. as functionally equivalent elements to the claimed scan horn and dipole magnet, since the disclosed function of the combination scan horn (50) compound-bending magnet (64) of Koenck et al., is to converge radiation from the source to a particular position in the pallet. Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41). Furthermore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the converter, such that it possessed an arcuate periphery. One would have been motivated to make such a modification for the purpose of enhancing radiation propagation along a particular direction as implied by Koenck et al. (column 8, lines 37-41).

23. **As per claims 22-26**, Koenck et al. as modified in claim 21, disclose a system wherein radiation in provided in a particular plane and a member is provided for rotating the pallet on an axis substantially perpendicular to he plane of radiation (column 7, lines 46-49; column 8, lines 2-7). For purposes of discussion, Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41).

24. **As per claim 27**, Koenck et al. disclose a system comprising a source of radiation and a first member for rotating a pallet. Koenck et al. do not explicitly disclose a system further comprising magnetic members constructed and disposed relative to one another or a control system for providing a radiation form the source to the pallet.

25. Koenck et al. teach the use of a compound-bending magnet for converging radiation from the source to a particular position in the pallet during the first state of the source of radiation (see Fig. 4, above). Additionally, Koenck et al. teach the rotation of a pallet through a particular angle to irradiate the entire pallet (see Figs. 12 and 13, above; see also column 7, lines 46-49; column 8, lines 2-7).

26. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the system of Koenck et al. such that it incorporated magnetic members constructed and disposed relative to one another and a control system for providing radiation from the source to the pallet. One would have been motivated to make such a modification for the purposes of a) controlling radiation dosage applied to the pallet as suggested by Koenck et al. (column 7, lines 46-49; column 8, lines 2-7; see also column 8, lines 8-10) and b) converging radiation from the source to a particular position in the pallet, as suggested by Koenck et al. (see Fig. 4, above). Examiner regards the compound-bending magnet of Koenck et al. as a functionally equivalent element to the claimed magnetic members constructed and disposed relative to one another, since the disclosed function of the compound-bending magnet of Koenck et al., is to converge radiation from the source to a particular position in the pallet during the first state of the source of radiation. Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41).

27. **As per claims 28-31**, Koenck et al., as modified in claim 27, discloses a system wherein a converter (70) is provided to provide X-rays; wherein the focused position is at the center of the pallet; wherein the radiation initially constitutes electron beamlets (52) and wherein the electron beamlets are converted to X-rays before the electron beamlets reach the pallet. For

purposes of discussion, Examiner further notes that Koenck et al. anticipate modifications to the disclosure by those skilled in the art (column 8, lines 37-41).

Response to Arguments

28. Applicant's arguments filed 11/23/05 have been fully considered but they are not persuasive. In particular, Examiner wishes to first draw attention to a comparison of the art of record - illustrative Fig. 4 to Koenck et al. (U.S. Patent 6,931,095) and the instant application (10/681,756) - Fig. 2. This comparison will be the basis for the subsequent discussion.

29.

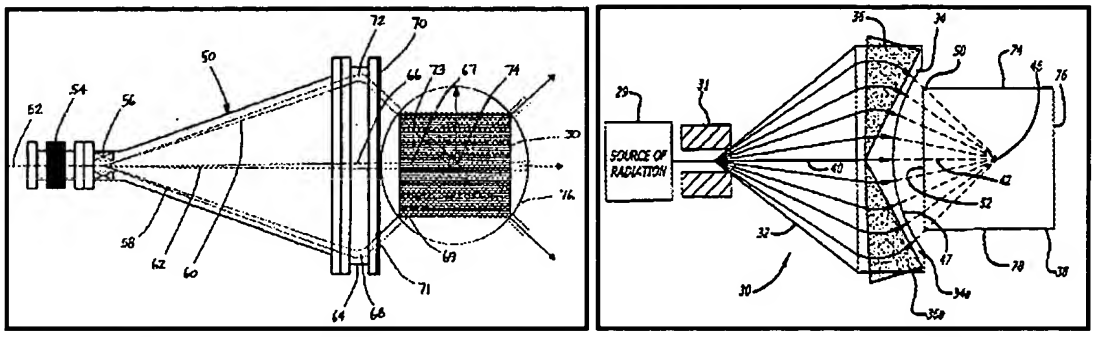


Fig. 4 (Left) - System for Irradiating Articles - U.S. Patent 6,931,095 to Koenck et al.; Fig. 2 (Right) - X-ray Pallet Processing – U.S. Patent Application Publication 2005/0078789 to Miller (Instant Application 10/681,756)

30. As noted above, Koenck et al. disclose a system and method for irradiating a pallet (see Fig. 4, above); however, some features are either not expressly illustrated or referenced within the corresponding Figures and or disclosure. In particular, Examiner regards the irradiation sequences of the system disclosed by Koenck et al. as anticipatory to the irradiation sequences of the system(s) disclosed in the instant application. For purposes of examination, Examiner has treated these limitations as obvious in view of the teachings of Koenck et al. (and further supported by column 8, lines 37-41 of Koenck et al.). The discussion below hinges primarily on the obviousness of modifications to the components of the disclosed system.

31. As per independent claims 1, 18 and 27, Examiner recognizes that Koenck et al. do not explicitly disclose a motor (or corresponding control system) for rotating a pallet; wherein the motor rotates the pallet through a particular angle each time the source and holder are in a second state. However, as noted above, and further supported by Figs. 12 and 13 of the Koenck et al. reference, Koenck et al. teach a system wherein a pallet is rotated relative a beam for a total of 360 degree irradiation. It would have been obvious to one having ordinary skill in the art to recognize that the teaching within the reference relates to a system comprising a motor (and/or control system) configured to rotate a pallet for the application of radiation (see also column 7, lines 46-49; column 8, lines 2-7; see also column 8, lines 8-10). Examiner concludes that independent claims 1, 18 and 27 are obvious in view of the implicit and explicit teaching of Koenck et al.

32. As per independent claims 9, 21, 32 and 38, Koenck et al. disclose a system wherein compound magnets are utilized to shape a beam trajectory (see Fig. 4 above). Koenck et al. do not explicitly disclose a system as comprising a magnetic lens assembly (i.e. dipole magnet) or arcuate converter. One having ordinary skill in the art, however, would recognize that the compound-bending magnet (64) of Koenck et al. serves as a functionally equivalent element to the claimed magnetic lens assembly, since the disclosed function of the compound-bending magnet (64) of Koenck et al., is to converge radiation from the source to a particular position in the pallet (contrast the compound-bending magnet (64) of Koenck et al. Fig.4 above, with the claimed magnetic lens assembly (referred to in the specification as a dipole magnet (36) – Fig. 2 above). With respect to the arcuate converter, configured to covert electron beamlets into X-ray radiation, Examiner notes that the shape of the converter of Koenck et al. (70) is planar.

Examiner also recognizes that the functionality of the claimed arcuate converter and that of Koenck et al. is similar. Examiner further refers to applicant's admission concerning the shape of the converter (34), as found in the specification (see U.S. Patent Application Publication 2005/0078789, para. [0032]), in which the shape of the converter may be planar or arcuate (see Figs. 2 and 5); these alternate design embodiments do not alter the functionality of the converter. As such Examiner does not believe that the claimed shape of the converter distinguishes over the converter of Koenck et al. Examiner concludes that independent claims 9, 21, 32 and 38 are therefore obvious in view of the implicit and explicit teachings of Koenck et al.

33. For at least the above reasons, Examiner concludes that claims 1-6, 9-39 and 41-43 are properly rejected under 35 USC 103 (a) in view of Koenck et al.

Conclusion

34. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (571) 272-2496. The examiner can normally be reached on M - F (9 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272 2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Courtney Thomas

Courtney Thomas
Examiner
Art Unit 2882